

**REMARKS**

Upon entry of this Amendment, claims 1-2, 5, and 9-11 are all the claims pending in the Application. Applicant submits that no new matter has been entered.

**I. Preliminary Matters**

Regarding the August 8, 2003 Information Disclosure Statement, the Examiner maintains that the non-patent literature document, i.e. "Electronics Mounting Technology Basic Course", as well as JP 61-174693, have not been considered since no English translations are available. However, when filing the Information Disclosure Statement, Applicant submitted a copy of an Office Action in the prosecution of the Japanese application corresponding to the subject application, as well as an English translation of the pertinent portions of the Office Action, indicating the degree of relevancy found by the Japan Patent Office for the references.

In accordance with MPEP § 609, a translation of a non-English language reference is not required when an IDS is submitted with a concise explanation of the relevance of a cited document submitted for each patent, publication, or other information listed in an IDS that is not in the English language (See MPEP 609, and 37 C.F.R. § 1.98(a)(3)). When a document is cited in a foreign patent office action or search report, the statement of relevance may be a translation of the portion of the foreign office action indicating the relevance found for the documents. Therefore, Applicant submits that the translation of the foreign office action, submitted as the statement of relevance with the August 8, 2003 Information Disclosure Statement, fully satisfies the requirements under MPEP § 609. Accordingly, the cited references should be considered by

the Examiner. Applicant provides a duplicate Form-1449, listing the references, for the Examiner's initials.

The Examiner has objected to the drawings because Fig. 8 is not labeled as prior art. Accordingly, Applicant submits herewith a substitute formal drawing for Fig. 8, as suggested by the Examiner.

Applicant has amended claims 1 and 2 in regard to an aperture size of the claimed through hole. Applicant submits that support for the amendments is found in the non-limiting embodiments of Figs. 1 and 2 of the present Application. Therefore, no new matter has been added.

Further, the Examiner has objected to claim 11 under 37 C.F.R. § 1.75 as being a substantial duplicate of claim 10. Applicant submits that such duplication was an inadvertent error. Accordingly, Applicant has amended claim 11 and respectfully requests the Examiner to withdraw the objection.

## **II. Rejections under 35 U.S.C. § 112, first paragraph**

The Examiner has rejected claims 3, 6 and 12 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. However, since Applicant has canceled claims 3, 6 and 12, without prejudice or disclaimer, Applicant submits that the rejection of such claims is now moot.

**III. Rejections under 35 U.S.C. § 112, second paragraph**

The Examiner has rejected claims 1, 8, 9, 10 and 11 under 35 U.S.C. § 112, second paragraph as being indefinite.

Regarding claims 1, 10 and 11, the Examiner maintains that the terms “close to” is not defined by the claim, and therefore renders the claims indefinite. Applicant has amended claims 1, 10 and 11 in a manner believed to overcome the Examiner’s rejection. Further, Applicant has made similar amendments to claims 2 and 5. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejections.

Since claim 8 has been canceled, without prejudice or disclaimer, Applicant submits that the rejection of such claim is now moot.

Regarding claim 9, the Examiner maintains that that claim does not further limit claim 1, of which it depends. Accordingly, Applicant has rewritten claim 9 into independent form to reduce any indefiniteness, and respectfully requests the Examiner to reconsider and withdraw the rejection.

Further, since the rejected limitation of claim 9 was recited in claim 9 as **originally** filed, and not rejected in any of the previous Office Actions, Applicant submits that the current Office Action should be on a non-final basis.

**IV. Rejections under 35 U.S.C. § 102(b)**

Claims 2, 4, 5, 7 and 8 have been rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,771,075 to Phelan ("Phelan").

Independent claim 2 recites that an aperture size of a through hole formed in a ground plate is smaller than a width of a signal line.

The Examiner maintains that Phelan discloses the features of claim 2. However, as shown in Fig. 1 of Phelan, the aperture size of slots 14 is larger than a width of the strip conductors 15. Applicant submits that Phelan fails to teach or suggest forming the slots 14 to be smaller than a width of the strip conductors 15. Accordingly, Applicant submits that claim 2 is patentable over the cited reference and respectfully requests the Examiner to reconsider and withdraw the rejection.

Independent claim 5 recites that at least one through hole is formed in a signal line, as well as a ground plate. An inner wall of the through hole formed in the signal line is only directly electrically connected to the signal line, and an inner wall of the through hole formed in the ground plate is only directly electrically connected to the ground plate.

Regarding the claimed through hole formed in the signal line, the Examiner alleges that both strip conductors 15 of Phelan, shown in Figs. 1 and 2, are con-contiguous, and therefore, form a through hole. However, such interpretation is contrary to the recitation of the claim, as well as the reference. For example, the only "through hole" disclosed in the reference is slots 14 (Fig. 1). Neither the upper nor lower strip conductors 15 are disclosed as containing a respective

through hole. Also, claim 5 does not recite that the through hole is formed through both of the signal lines. Rather, the claimed through hole is formed in only one signal line, i.e. “said” signal line. Therefore, since the Examiner alleges that the through hole is formed by both contiguous strip conductors, i.e. through both strip conductors 15, Applicant submits that Phelan fails to disclose the claimed signal line through hole.

Based on the foregoing, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection.

Further, since claims 4, 7 and 8 have been canceled, without prejudice or disclaimer, Applicant submits that the rejection of such claims is now moot.

**V. Rejections under 35 U.S.C. § 103(a)**

A. The Examiner has rejected claim 1 as being unpatentable over U.S. Patent No. 3,925,740 to Steensma (“Steensma”) in view of U.S. Patent No. 5,633,613 to MacDonald (“MacDonald”).

Applicant submits that claim 1 is patentable over the cited references. For example, claim 1 recites that at least one through hole is formed in a signal line, and an inner wall of the through hole is only directly electrically connected to the signal line.

The Steensma reference discloses tuning structures for microstrip transmission lines (col. 1, lines 7-9). On page 11 of the Office Action, the Examiner maintains that Steensma suggests

the feature of claim 1 recited above. In particular, the Examiner maintains that strip conductor 3 and stub strip conductor 8 form the claimed signal line, and gap 7 discloses the claimed through hole (Fig. 2 of Steensma). Steensma discloses that strip conductor 3 and stub strip conductor 8 are separate conductors which are placed perpendicular to one another (col. 2, lines 7-9). However, as stated above, claim 1 recites a through hole in a signal line, not a signal line separated into multiple components or parts. Therefore, Applicant submits that the gap 7 formed between the perpendicular conductors does not form a through hole in one, i.e. "a" signal line, as required by claim 1.

Claim 1 also recites that another signal line is disposed on an opposite side of the ground plate as the signal line (i.e. the first recited signal line).

The Examiner acknowledges that Steensma fails to teach or suggest such a feature, but contends that MacDonald does. MacDonald discloses microwave phase and amplitude modulation structures and methods (col. 1, lines 7-8). As shown in Fig. 1, MacDonald discloses signal line 32, and another signal line 30 disposed on an opposite side of ground plane 34 (col. 3, lines 23-26). Further, MacDonald discloses that the aperture 26 is formed in the ground plane 34 (Fig. 1; col. 3, lines 27-28). However, there is no teaching or suggestion that an aperture is formed in either of signal lines 30 or 32 (Fig. 1). Therefore, MacDonald fails to cure the deficient teachings (i.e. lack of the claimed through hole) of Steensma.

Based on the foregoing, Applicant submits that claim 1 is patentable over the alleged combination of Steensma and MacDonald. Accordingly, Applicant respectfully requests the Examiner to reconsider and withdraw the rejection.

B. The Examiner has rejected claims 1, 10 and 11 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,144,268 to Matsui et al. ("Matsui") in view of MacDonald.

Applicant submits that claim 1 is patentable over the cited references. For example, claim 1 recites that at least one through hole is formed in a signal line, and an inner wall of the through hole is only directly electrically connected to the signal line.

Matsui discloses high-frequency transmission lines and dielectric resonators suitable for use in a microwave or millimeter-wave band (col. 1, lines 9-11). On page 12 of the Office Action, the Examiner maintains that Matsui suggests the features of claim 1 recited above. For example, the Examiner maintains that electrodes 3' disclose the claimed signal lines, and gaps 4 disclose the claimed through holes (Fig. 1 of Matsui). However, gaps 4 are formed, for example, by etching an electrode film which was formed over an entire surface of electrode 3 (col. 5, lines 17-21). Due to the etching of the gaps 4 in electrode 3, the plurality of strip line electrodes 3' are formed in between each gap (Fig. 1; col. 5, lines 17-22). Therefore, Applicant submits that the gaps 4 are not formed in the signal lines 3'. Rather, as stated above, the gaps 4 "form" the signal lines 3', and are disposed in between each signal line 3'.

Claim 1 further recites that an aperture size of the through hole is smaller than a width of the signal line.

Applicant submits that Matsui fails to teach or suggest such a feature. As shown in Fig. 1 of Matsui, the gaps 4 extend an entire length of the dielectric plate 1. Therefore, even if Applicant assumed *arguendo* that the gaps 4 formed a type of through hole, the size of the gaps 4 is larger than a width of the strip line electrodes 3'. Further, the configuration of the gaps 4 allow current to flow, while eliminating concentration of the current at the edge of the strip line electrodes 3'. The wider the gap width, the smaller the current concentration at the edges. If the gaps 4 were made smaller than the width of the strip line electrodes 3', the elimination of current concentration at the edge portion could not be expected.

Claim 1 also recites that another signal line is disposed on an opposite side of the ground plate as the signal line (i.e. the first recited signal line).

The Examiner acknowledges that Matsui fails to teach or suggest such a feature, but contends that MacDonald does. However, Applicant submits that MacDonald fails to cure the deficient teachings of Matsui for at least similar reasons as presented above in the rejection of claim 1 in view of Steensma and MacDonald.

Since claim 10 contains features which are analogous to the features recited in claim 1, Applicant submits that claim 10 is patentable over the cited references for at least analogous reasons as presented above.



In addition, claim 10 recites that the at least one through hole has a plurality of through holes formed along a longitudinal direction of a signal transmission line, and are arranged at equal spaces or in the same pattern. On page 13 of the Office Action, the Examiner maintains that the claim language implies that a plurality of holes may be thought of as contained in “one” hole. However, Applicant respectfully traverses such statement. For example, claim 10 first recites “at least one” through hole. Such claim language implies that more than one through hole can be present in the non-limiting embodiment of claim 10. Accordingly, the subsequent claim language, which recites that the at least one through hole comprises “a plurality” of through holes, is just further defining the term “at least one”. Therefore, contrary to the Examiner’s assertion, claim 10 recites a plurality of through holes. However, for clarification purposes and to expedite prosecution, Applicant has amended claims 10 and 11.

Regarding the claimed plurality of through holes, Applicant submits that gaps 4 of Matsui fail to teach or suggest the claimed plurality of through holes for the reasons presented above. Further, Applicant submits that MacDonald fails to teach or suggest a plurality of through holes formed in either of signal lines 30 or 32. Accordingly, Applicant submits that claim 10 is patentable over the cited references.

As stated previously, Applicant has amended claim 11 since such claim was a substantial duplicate of claim 10. Applicant again submits that such duplication was an inadvertent error.

Claim 11 recites that a plurality of through holes are formed in a ground plate. Applicant submits that Matsui fails to teach or suggest a plurality of through holes formed in ground


electrode 2 (Fig. 1). Further, Applicant submits that MacDonald fails to teach or suggest a plurality of through holes in ground plane 34 (Fig. 1). Rather, MacDonald just discloses a single through hole (i.e. aperture 26) (Fig. 1). Accordingly, Applicant submits that claim 11 is patentable, and respectfully requests the Examiner to reconsider and withdraw the rejection.

## VI. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

  
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